 <p>Parc de la porte Nord rue C. Colomb 62700 Bruay La Buisnière Tél. : 03.21.61.64.00 Fax : 03.21.61.64.01</p>	<p>Test report according to ISO standard 5660-1</p> <p>Fire tests - - reaction to fire – Part 1: Heat release of building products (conical-calorimeter method)</p>	<p>E 05/60 6/29/99 rev. c Test 238/02/311A</p> <p>page: 5/9</p>
--	--	---

4 – Special comments

For each sample, three test-pieces are tested at irradiance of 50 kW/m².

Orientation during the test: horizontal

Rated output of the ventilation system: 0.024 m³/s.

The phase not exposed to the test-piece radiation is covered with aluminum foil of a thickness ranging between 0.03 and 0.05 mm, the shiny side in contact with the sample.

The thermo-oxidant degradation process is considered to be terminated when the percentage of oxygen in the combustion gases is **tending toward 20.95%**.


7 – Results

7-1 Sample identified: *WITHOUT RETARDANT.*

	Without retardant 1	Without retardant 2	Without retardant 3	Average	Standard deviation (%)
Initial mass (g)	8.06	7.85	7.84	7.92	1
Loss of mass (%)	95	100	98	97.69	2
Thickness (mm)	0.82	0.82	0.82	0.82	0
Ignition time (s)	16	17	16	16	3
THR (MJ/m ²)	19.64	21.47	21.49	20.87	4
MLR (g/s)	0.04	0.04	0.03	0.04	9
RHR max (kW/m²)	811.59	811.59	853.59	825.59	2
EHC MJ/kg	9.77	8.17	6.96	8.30	14
Total CO production (g)	0.17	0.15	0.15	0.16	6
Total CO ₂ production (g)	19.16	19.86	20.80	19.94	3
TSV (m ³)	0.19	0.22	0.21	0.21	6

THR Total Heat release
MLR Mass loss rate
RHR Rate of heat release
EHC Effective heat of combustion
TSV Total smoke volume.



 Parc de la porte Nord rue C. Colomb 62700 Bruay La Buisnière Tél. : 03.21.61.64.00 Fax : 03.21.61.64.01	Test report according to ISO standard 5660-1	E 05/60 6/29/99 rev. c Test 238/02/311A
	Fire tests - - reaction to fire – Part 1: Heat release of building products (conical-calorimeter method)	page: 7/9

7-2 Sample identified: WITH RETARDANT.

	With retardant 1	With retardant 2	With retardant 3	Average	Standard deviation (%)
Initial mass (g)	4.14	4.32	4.32	4.26	2
Loss of mass (%)	97	97	100.00	97.95	2
Thickness (mm)	0.47	0.47	0.47	0.47	0
Ignition time (s)	17	15	16	16	5
THR (MJ/m ²)	7.08	8.10	7.31	7.50	6
MLR (g/s)	0.07	0.07	0.10	0.08	19
RHR max (kW/m²)	434.28	453.75	384.72	424.25	7
EHC MJ/kg	10.90	9.60	12.20	10.90	10
Total CO production (g)	0.40	0.42	0.43	0.42	3
Total CO ₂ production (g)	6.99	6.87	7.50	7.12	4
TSV (m ³)	0.29	0.26	0.33	0.29	9

THR *Total Heat release*
MLR *Mass loss rate*
RHR *Rate of heat release*
EHC *Effective heat of combustion*
TSV *Total smoke volume.*

Observations during the test:

- Giving off of white smoke in the first seconds of the test.
- Several flashes prior to actual ignition accompanied by melting (liquid phase) of the material.
- Slight carbonaceous residue (see photo 2).

